

terminal construction. Especially when implemented the embodiment illustrated in **FIGS. 7a** and **7b** in the flip-type mobile terminal construction, the touch pad UI hinged to the mobile terminal is completely opened into the back side position. Furthermore it should be noted that functionality, such as virtual keyboard, discussed in connection with **FIGS. 7a** and **7b**, may also be implemented in other embodiment of the invention introduced in this document.

[0068] The invention has been explained above with reference to the aforementioned embodiments, and several advantages of the invention have been demonstrated. It is clear that the invention is not only restricted to these embodiments, but comprises all possible embodiments within the spirit and scope of the inventive thought and the following patent claims. For example, different kinds of functionality may be achieved by programmatically, such as the touch pad may be divided virtually in two parts to have separate left and right parts, if desired, in any embodiment described above.

[0069] Further it has to be noted that the touch pad UI may be arranged to carry out one part of functionality and the mobile terminal another part of functionality of the whole arrangement comprising the touch pad UI and mobile terminal. The invention does not explicitly define certain tasks for the touch pad UI and certain tasks for the mobile terminal, but the component executing the task may vary between the touch pad UI and mobile terminal.

[0070] Furthermore according to additional embodiments of the invention the touch pad UI device may be hinged to the mobile terminal also in somewhere else than at the lowest part, such as at the upper part, whereupon conversion for the direction data of the fingers movements on the touch pad may be made particularly in vertical direction when the touch pad UI is opened more than approximately 180° in vertical direction relative to the mobile terminal.

[0071] Similarly, the touch pad UI device may be hinged to the mobile terminal at the right or left part, whereupon conversion for the direction data of the fingers movements on the touch pad may be made particularly in horizontal direction when the touch pad UI is opened more than approximately 180° in horizontal direction relative to the mobile terminal.

[0072] In this document the vertical direction is used to be the direction, which is in direction of the arrow **414** illustrated in **FIGS. 6a** and **6b** and the horizontal direction is used to be the direction essentially perpendicular to said vertical direction. The horizontal direction is illustrated in **FIGS. 5a** and **5b** by the arrow **408**.

1. A method for providing a touch pad UI function for a mobile terminal, where the mobile terminal comprises a display and wherein the touch pad UI is a touch pad user interface input device, comprising the steps of:

arranging the touch pad UI into the back side of the mobile terminal,

operating the touch pad UI by touching the touch pad UI at least by one finger, and

observing the position of at least one finger on the touch pad UI, and determining the corresponding position of at least one cursor on the display in order to displaying

said cursor according to the position of at least one finger on the touch pad UI.

2. A method according to claim 1, wherein the touch pad UI is a multifunctional pressure sensitive touch pad user interface input device.

3. A method according to claim 1, further including the step of displaying a cursor on the display essentially on the imaged line extending from the finger on the touch pad perpendicularly through the touch pad UI and display.

4. A method according to claim 1, wherein the touch pad UI is fixedly arranged into the back side of the mobile terminal.

5. A method according to claim 1, wherein the touch pad UI is hinged to the mobile terminal at least at one of the following part of the mobile terminal: lowest part, upper part, right part and left part.

6. A method according to claim 5, further including the steps of arranging the hinged touch pad UI in the position of angle between 0° and 360° relative to the mobile terminal and observing said position angle and if the touch pad UI is closed, when the position angle is essentially 0°, the touch pad UI is arranged to act as a mechanical protector for the display and the touch sensitive surface of the touch pad UI, and if the touch pad UI is opened so that the position angle is more than approximately 0°, the touch pad UI is arranged to act as a data input and pointing device.

7. A method according to claim 6, wherein the touch pad UI is completely opened so that the position angle is essentially 360°, the touch pad UI is arranged to operate in two-hand mode, where data is inputted by at least one finger through the touch pad UI device so that when moving the finger on the touch pad a cursor corresponding the moving finger will move on the display of the mobile terminal according to the movements of the finger.

8. A method according to claim 6, further including the steps of observing whether the position angle of the touch pad UI, which is hinged either to bottom or upper part of the mobile terminal, is more than predetermined limit and if, converting the read direction data of the fingers movements on the touch pad in vertical direction to contrary.

9. A method according to claim 6, further including the steps of observing whether the position angle of the touch pad UI, which is hinged either to right or left part of the mobile terminal, is more than predetermined limit and if, converting the read direction data of the fingers movements on the touch pad in horizontal direction to contrary.

10. A method according to claim 8, wherein the predetermined limit for the position angle is approximately 180°.

11. A method according to claim 1, further including the step of displaying at least one object on the display of the mobile terminal, where the object is at least one of the following: menu, icon, number, letter, character, button and at least part of virtual keyboard.

12. A method according to claim 1, further including the step of observing press of at least one finger on the touch pad UI and determining the press as a click-operation.

13. A method according to claim 1, further including the step of dividing the touch pad UI virtually at least one first portion and at least one second portion.

14. A method according to claim 13, wherein a first finger on the first portion of the touch pad UI moves a cursor in the display and a second finger on the second portion of the touch pad UI scrolls a content displayed on the display to the up, down, left and right directions.